Claims:

1. An apparatus for plastically expanding a tubular patch in a wellbore comprising:

(a) an optional gripping assembly comprising at least one radially extendible gripping member for gripping the interior wall of the tubular patch and a mechanical means for radially extending the gripping member(s);

(b) a rotatable expander tool, disposable in the tubular patch, comprising a plurality of expander elements radially extendible therefrom adapted to engage with the interior wall of the tubular patch and a mechanical means for radially extending the expander elements; and

(c) at least one electric motor for, optionally, supplying motive power to the mechanical means for radially extending the gripping member(s) of the optional gripping assembly, for supplying motive power to the mechanical means for radially extending the expander elements of the expander tool, and for providing rotation to the expander tool.

2. An apparatus as claimed in Claim 1 that is suspended from wireline or electric coiled tubing.

3. An apparatus as claimed in Claims 1 or 2 wherein the mechanical means for radially extending the gripping member(s) of the gripping assembly and/or for radially extending the expander elements of the expander tool is a jack mechanism or a conical displacement mechanism.

4. An apparatus as claimed in any one of the preceding claims wherein the expander elements of the expander tool are rollers or balls.

5. An apparatus as claimed in any one of the preceding claims wherein the expander tool is provided with a further mechanical means for moving the expander

elements of the expander tool longitudinally within the tubular patch and the at least one electric motor (c) also provides motive power to the further mechanical means.

6. An apparatus as claimed in any one of the preceding claims wherein the expander tool is provided with a drive means for rotating the expander tool and the at least one electric motor (c) also provides rotation to the drive means.

7. An apparatus as claimed in Claim 6 wherein the mechanical means for radially extending the gripping member(s) of the gripping assembly, the mechanical means for radially extending the expander elements of the expander tool, the mechanical means for moving the expander elements of the expander tool longitudinally within the tubular patch and the drive means for rotating the expander tool are provided with dedicated electric motors.

8. A method for sealing a hole in a tubular in a wellbore or for sealing an open hole interval of a wellbore comprising:

(A) introducing a tubular patch system into the wellbore and locating the system adjacent a hole in the tubular or adjacent the open hole interval of the wellbore that it is desired to seal, the tubular patch system comprising a tubular patch and an apparatus for plastically expanding the tubular patch comprising (a) a gripping assembly comprising at least one radially extendible gripping member for gripping the interior wall of the tubular patch as the patch is being introduced and located at the desired location in the wellbore and a mechanical means for radially extending the gripping member(s); (b) a rotatable expander tool, disposed in the tubular patch, comprising a plurality of expander elements radially extendible therefrom adapted to engage with the interior wall of the tubular patch and a mechanical means for radially extending the expander elements; and (c) at least one electric motor for supplying motive power to the mechanical means for radially extending the gripping member(s) of the gripping assembly, for supplying motive power to the mechanical means for radially extending the expander elements of the expander tool, and for providing rotation to the expander tool; and

(B) actuating the expander tool to plastically expand the tubular patch to seal off the hole in the tubular or to seal off the open hole portion of the wellbore.

9. A method as claimed in Claim 8 wherein the at least one radially extendible gripping member engages with and grips the interior wall of the tubular patch at the

upper end thereof.

10. A method as claimed in Claims 8 or 9 wherein a portion of the patch is plastically expanded by rotating the expander tool and actuating the mechanical means for radially extending the expander elements of the expander tool so that the expander elements engage with the interior wall of the patch and the patch is plastically expanded to form a fluid tight annular (or ring) seal with the wall of the tubular or with the open hole.

11. A method as claimed in Claim 10 wherein the expander tool comprises a further mechanical means for moving the expander elements in a longitudinal direction within the patch and the further mechanical means is electrically actuated to move the expander elements of the expander tool longitudinally through the patch thereby extending the annular seal or plastically expanding the entire tubular patch.

12. A method as claimed in Claim 10 or 11 wherein, after forming the annular seal, the radially extendible expander elements of the expander tool and the radially extendible gripping member(s) of the gripping assembly are retracted and the apparatus is moved to a new position in the patch to form a further annular seal.

13. A method as claimed in Claim 12 wherein at least one annular seal is formed above the hole in the tubular or above the open hole interval of the wellbore and at least one annular seal is formed below the hole in the tubular or below the open hole interval of wellbore.

14. A method as claimed in any one of Claims 8 to 13 wherein the patch is deployed in the wellbore at a location below a restriction, D_1, and the patch comprises a metal tube that has been deformed into an irregularly shaped tube having a maximum external cross-sectional dimension, D_2, that is less than D_1 and wherein after the patch has passed through the restriction to the desired location in the wellbore, the expander tool is actuated to reform the patch into a substantially regular shaped tube having an external diameter, D_3, that is greater than D_1, and to plastically expand at least a portion of the reformed tube to an external diameter, D_4, to form a fluid tight annular seal with the wall of the tubular or the wall of the open hole wellbore wherein the expansion ratio, $[(D_4-D_3)/D_3] \times 100$, of the reformed tube is in the range 10 to 30%.

15. A method as claimed in Claim 14 wherein the tubular patch system is passed to the selected location in the wellbore through the production tubing.

16. A method as claimed in Claims 14 or 15 wherein the deformed patch is a longitudinally corrugated tube.

17. A method as claimed in any one of Claims 8 to 16 wherein the tubular metal patch is provided with an outer resilient sealing member to provide an improved seal with the tubular or with the wall of the open hole wellbore.

18. A method as claimed in any one of claims 8 to 17 wherein the patch is formed from a plurality of tubular metal sections wherein the sections of the patch are joined together using deformable and optionally plastically expandable joints.

19. A method as claimed in any one of Claims 8 to 18 wherein at least one section of the patch is of increased wall thickness, t_1, compared with the wall thickness, t_2, of adjacent sections of the patch (i.e. $t_1 > t_2$) and wherein the rotatable expander tool is actuated to plastically expand the at least one section of metal tube of increased wall thickness to form an annular seal with the tubular or open hole wellbore.

20. A method as claimed in Claim 19 wherein the section(s) of metal tube of increased wall thickness, t_1, is provided with an annular recess or groove on the outer surface thereof having an annular resilient sealing ring located therein and wherein the mechanical means for radially extending the expander elements is actuated to plastically expand the at least one section of metal tube of increased wall thickness, t_1, thereby forcing the annular resilient sealing ring against the tubular or against the wall of the open hole wellbore to form a fluid-tight annular seal.

21. A method for sealing a hole in a tubular in a wellbore or for sealing an open hole interval of a wellbore comprising:

(A) introducing a tubular patch into the wellbore and locating the tubular patch adjacent the hole in the tubular or adjacent the open hole interval of the wellbore;

(B) (i) plastically expanding a first portion of the tubular patch above the hole in the tubular or above the open hole interval of the wellbore into annular sealing engagement with the tubular or the open hole to form a first annular seal and (ii) plastically expanding a second portion of the tubular patch below the hole in the tubular or below the open hole interval of the wellbore into annular sealing engagement with the tubular or the open hole to form a second annular seal thereby sealing the hole in the tubular or the open hole interval of the wellbore.

22. A method as claimed in Claim 21 wherein further portions of the tubular patch

are plastically expanded into annular sealing engagement with the tubular or the open hole to form further annular seals.

23. A method as claimed in Claims 21 or 22 wherein the tubular patch is a tubular section of a sandscreen that comprises at least one tubular section and at least one screen section.

24. A method as claimed in Claims 21 or 22 wherein the tubular patch is deployed in the wellbore at a location below a restriction, D_1, and the patch comprises a metal tube that has been deformed into an irregularly shaped tube having a maximum external cross-sectional dimension, D_2, that is less than D_1 and wherein after the patch has passed through the restriction to the desired location in the wellbore, the patch is reformed into a substantially regular shaped tube having an external diameter, D_3, that is greater than D_1, and the first and second annular seals are formed by plastically expanding the first and second portions of the reformed tube to an external diameter, D_4, wherein the expansion ratio, $[(D_4-D_3)/D_3] \times 100$, of the first and second portions of the reformed tube is in the range 10 to 30%.

25. A method as claimed in any one of the preceding claims wherein the first, second and optional further portion(s) of the patch that are plastically expanded to form the annular seals with the tubular or open hole are of increased wall thickness, t_1, compared with the wall thickness, t_2, of adjacent portions of the patch.

26. A method as claimed in any one of Claims 21 to 25 wherein the ring seals are formed using the apparatus of any one of Claims 1 to 7.

27. A patch for deployment in a wellbore at a location below a restriction, D_1, the patch comprising a deformed irregularly shaped metal tube having a maximum external diameter, D_2, wherein the patch is capable of being reformed into a substantially regular shaped tube having an external diameter, D_3, where D_2 is less than D_1 and D_3 is greater than D_1, and wherein at least a section of the reformed tube is capable of being plastically expanded to an external diameter, D_4, wherein the expansion ratio, $[D_4-D_3/D_3] \times 100$, of the reformed tube is in the range 10 to 30%.

28. A plastically expandable tubular metal patch wherein at least one section of the metal tube is of a reduced inner diameter and hence increased wall thickness, t_1, compared with the wall thickness, t_2, of adjacent sections of the metal tube and the difference in thickness, t_1-t_2, corresponds to the radial distance over which the section of

the metal tube of increased wall thickness, t_1, is to be plastically expanded.

29. A plastically expandable tubular metal patch as claimed in Claim 28 wherein the section(s) of metal tube of increased wall thickness, t_1, is provided with an annular recess or groove on the outer surface thereof having an annular resilient sealing ring located therein.

30. A method of hanging a liner string from a cased or lined interval of a wellbore comprising:

(A) introducing into the wellbore a liner system comprising a liner string and an apparatus for forming an annular seal between the liner string and the cased or lined interval of the wellbore wherein the apparatus comprises (a) a gripping assembly comprising at least one radially extendible gripping member for gripping the interior wall of the liner string as the liner string is being introduced into the wellbore and a mechanical means for radially extending the gripping member(s); (b) a rotatable expander tool, disposed in an upper portion of the liner string, comprising a plurality of expander elements radially extendible therefrom adapted to engage with the interior wall of the liner string and a mechanical means for radially extending the expander elements; and (c) at least one electric motor for supplying motive power to the mechanical means for radially extending the gripping member(s) of the gripping assembly, for supplying motive power to the mechanical means for radially extending the expander elements of the expander tool, and for providing rotation to the expander tool;

(B) locating the liner system in the wellbore such that an upper section of the liner string overlaps with a lower section of the cased or lined interval of the wellbore; and

(C) actuating the expander tool so that the expander elements plastically expand a portion of the upper section of the liner string to form an annular seal between the upper section of the liner string and the lower section of the cased or lined interval of the wellbore and optionally, actuating the expander tool to form further annular seals between the upper section of the liner string and the lower section of the cased or lined interval of the wellbore.